

# One Good Turn

## ***New Civil Engineer***

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Civil Engineers working on the Channel Tunnel Rail Link Engineering are using simulation software AutoTURN from Transoft Engineering to model vehicle "turns". The program is helping minimize the environmental impact of the project by keeping the size of vehicle access areas to a minimum and at the same time reducing construction costs.

RLE is a joint venture between Bechtel, Ove Arup & Partners, Halcrow and Systra.

The design engineers working on the Thames and Kent areas were the first to exploit the benefits of AutoTURN. A vast array of road vehicle intersection, access, turning and parking points is needed for the mainly overland route. Access to track maintenance and emergency siding, new and existing road bridges, parking and loading areas all needed specific design consideration. In Kent alone there are over 100 separate vehicle access points along the road.

AutoTURN's detailed modelling and analysis was specifically important in reviewing and optimising non-standard situations.

"The danger was over specification," explains Graham Tivey, design engineer working on the CTRL Kent segment. "This can have an adverse impact on the environment and also on eventual construction costs. With such a large number of road vehicle access situations to deal with and a variety of vehicles to consider, AutoTURN allowed us to check each situation quickly."

Transoft's AutoTURN simulates tyre tracking and swept path turns for tracking and swept path turn for common vehicles. It carries an in-built library of standard design vehicles, to accommodate unique configurations. The powerful algorithms employed by the software permit vehicle manoeuvres within CAD drawings, and show accurate swept paths for vehicle turn simulations at slow speeds. One or two vehicles turns can be run at the same time in stopmotion or fluid animation.